

# **THE POTENTIAL PRESENCE OF CREOSOTE RINGS AT THE AGINCOURT AND MARATHON SOLAR PROJECT SITES**

URS Corporation  
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Several comments on these project's Initial Studies centered on the fact that a specific survey for creosote rings had not been performed, and asserted that these features may be present within the Agincourt and Marathon sites. The biological surveys performed within the project sites entailed over 160 hours of field time by professional biologists experienced in performing surveys in the Mojave Desert. Although a separate survey for creosote rings was not (and is not normally) performed, these features would have been documented during the full-coverage floristic surveys that were performed in spring 2011, had they been present. Nevertheless, on March 1, 2013 a URS biologist conducted a supplemental biological survey at the Agincourt and Marathon sites to better evaluate the presence of potential creosote rings. A second site visit was also conducted by County representatives, accompanied by URS biologists and other members of the Applicant's team, on March 5, 2013. Because the County's Development Code does not define creosote rings, a visit to the Soggy Lake Creosote Rings, a BLM-designated Area of Critical Environmental Concern (ACEC) where well-known, ancient creosote rings occur, was also conducted to offer a comparative perspective. These visits confirmed that the project sites do not contain such rings.

As described in the Biological Resources Assessment Reports for the Agincourt and Marathon projects, the habitat within the project sites is comprised exclusively of creosote bush/white bursage scrub. Because creosote bush (*Larrea tridentata*) is one of the two dominant shrubs in this community, it is not surprising that this species occurs abundantly throughout both project sites. In some areas within the project sites, clusters of creosote bush occur. These clusters were compared to creosote rings observed in the Soggy Lake Creosote Rings ACEC, and results of these comparisons are presented in detail below.

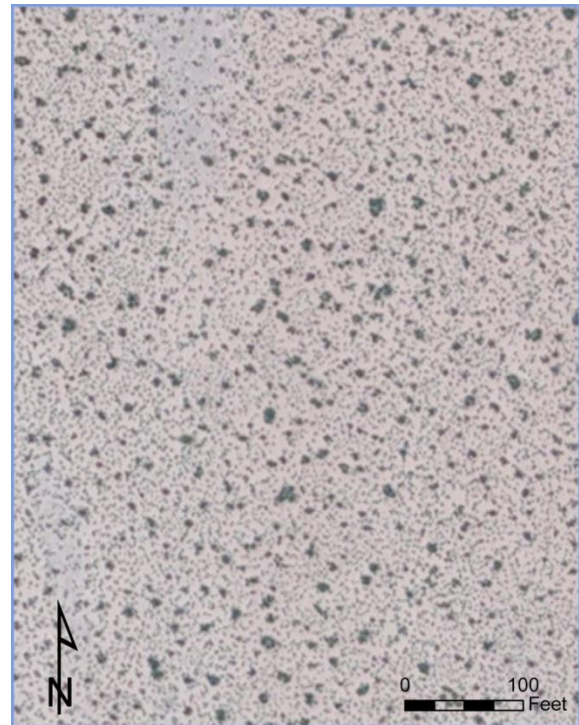
## **Visual Dissimilarity on Aerial Photographs**

Dissimilarities between the creosote bush clusters present within the project sites and the creosote rings occurring in the Soggy Lake Creosote Rings ACEC are most evident when viewing the two areas from the air. As shown on the aerial photographs below, the creosote rings within the ACEC are prominent and easily distinguished from the other creosote bushes in the surrounding landscape. The unvegetated centers of the rings are clearly visible, and it is readily apparent which creosote bushes belong to each ring. In contrast, aerial photography of the project sites at the same resolution and scale does not indicate the presence of any

well-defined rings. The creosote clusters are apparent, but do not have visible centers or interior boundaries (see aerial photos below).



**King Clone, Soggy Lake Creosote Rings  
ACEC (USFWS Photo)**



**Typical Creosote Bush Clusters at the  
Agincourt and Marathon Solar Sites**

### **Dissimilarity in Shape**

During site visits to the Agincourt and Marathon sites, the on-site creosote clusters were not found to exhibit typical creosote ring formations. Shapes of the creosote clusters were varied, with shapes generally including ovals, horseshoes and semicircles. In many instances, the outer edge of the creosote was not consistently vegetated and exhibited gaps or less developed vegetation on one side of the cluster. Nearly all of the clusters were vegetated from edge to edge, and lacked the unvegetated central area that is characteristic of creosote rings.

### **Lack of Creosote Bush Mounds**

Creosote rings are typically raised above the desert floor, possibly due to wind-blown sands accumulating around and inside of the creosote rings or to cumulative effects of fossorial rodent activity over long periods of time. None of the creosote bush clusters within the project sites were observed to be on mounds that are higher than the surrounding vegetation.

## **Dissimilarity in Creosote Bush Size Classes**

The creosote rings observed at the Soggy Lake Creosote Rings ACEC appeared to be comprised of similarly-sized individuals, which was not the case with many of the creosote bush clusters observed within the Agincourt and Marathon sites. In addition to being dissimilar in shape and appearance, the on-site clusters were typically composed individual plants of various size classes. This difference, as well as the absence of mounding and numerous discontinuities in the vegetation, are evident in the photograph of a cluster on the Marathon site (below, right). Compare this photograph with the one of the King Clone (below, left), a classic and well-defined creosote ring from the Soggy Lake Creosote Rings ACEC.



**King Clone, Soggy Lake Creosote Rings  
ACEC (USFWS Photo)**



**Typical Creosote Bush Clusters at the  
Agincourt and Marathon Solar Sites**

## **Conclusions**

A comparison of aerial photographs of the project sites and the Soggy Lake Creosote Rings ACEC shows that the solar sites do not exhibit the well-formed ring formations that are present within the ACEC. In addition, many of the factors that are used to identify creosote rings, such as the presence of a ring formation, identical size classes, and mound formation, are not found among the creosote bush clusters on the sites. The creosote bush clusters within the project sites are highly dissimilar from “reference” quality creosote rings, and the proposed solar projects will not affect such examples of this phenomenon.